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| 09/982,794 | 10/22/2001 | Shih-Hsiung Ni | 108339-00080 | 8401 |

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| EXAMINER | |
|---|---|
| DIVECHA, KAMAL B | |
| ART UNIT | PAPER NUMBER |
| 2151 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/982,794 | NI, SHIH-HSIUNG | |
| | Examiner | Art Unit | |
| | KAMAL B. DIVECHA | 2151 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

Claims 1-13 are pending in this application.

### *Response to Arguments*

Applicant's arguments with respect to claims 1-13 filed on November 22, 2006 in a Request for Continued Examination (RCE) have been entered and considered but are moot in view of the new ground(s) of rejection, as necessitated by substantial amendments, which has affected the scope of the claims.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the **second paragraph of 35 U.S.C. 112:**

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 6 and 10 recites the limitations "...an ingress module having an input interface to receive a data packet comprising a plurality of cells including a header cell, wherein the header cell of the plurality of cells comprises a header and packet data information...a header detector configured to detect the header cell of the data packet and remove the header from the header cell of the data packet, a counter to determine whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell, an insertion module configured to insert null bytes into the header cell of the data packet..."

The claims recites the limitation "the header cell of the data packet", "the header cell" in the claim. There is insufficient antecedent basis for this limitation in the claim.

For example:

The claim refers to receiving a data packet comprising plurality of cells including header cell. In other words one or more of the plurality of cells comprises one or more header cell, and wherein the one or more header cell comprises a header and a data portion. In this situation, it is unclear to which one of the header cell of the plurality of cells the functionality of detection, counting, insertion and extraction, is performed.

Furthermore, in the context of the claim, the functionality of determining whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell is unclear. It is unclear whether the determining is with respect to header or the packet data information.

Furthermore, in the context of the claim, the functionality of inserting null bytes into the header cell of the data packet is unclear. It is unclear whether the insertion is with respect to header of the header cell OR the packet data information of the header cell. Note that the header cell comprises header and packet data information.

For examining purposes, the process of counting, inserting and removing would be interpreted as with respect to a data packet.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 6-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being obvious over Thompson, Michael I. (herein known as Thompson, EP 0 572 145 A2) in view of Scott (U. S. Patent No. 6,512,773 B1), and further in view of Parruck et al. (hereinafter Parruck, U. S. Patent No. 7,139,271 B1).

As per claim 1, Thompson discloses a network device configured to prevent data misalignment of a data packet containing extra header bytes (col. 1 L25-38), the network device comprising:

an ingress module having an input interface to receive the data packet, wherein the data packet comprises a header and packet data information (col. 1 L25-30, col. 11 L26-32, applicant admitted prior art, AAPA, pg. 4 [0008]);

a header detector configured to detect a header of the data packet and remove the header from the data packet (col. 11 L51 to col. 12 L10, AAPA pg. 4 [0008]);

an insertion module configured to insert null bytes into the header of the data packet to form a modified data packet if the CPU determines that the header/data split is not on an even byte boundary (i.e. the number of bytes contained in data portion is even, multiple of predetermined bytes is an even number or odd, and the alignment must be corrected by processor

15 by inserting null bytes into the header of the cell (col. 12 L28-36, col. 1 L25-34; col. 5 L10-15, L29-37; fig 9; col. 4 L34-37: i.e. if the header/data split is not even, pad bytes or null bytes are inserted to correct the alignment)); and

an extraction module configured to remove the null bytes from the modified header of the data packet as a modified data packet exits the network device (col. 6 L35-46).

However, Thompson does not disclose a data packet comprising a plurality of cells including a header cell, wherein the header cell of the plurality of cells comprises a header and packet data portion (i.e. a typical ATM environment) and a counter to determine whether the header cell of the data packet contains a multiple of a predetermined number of bytes after the header has been removed from the header cell.

Scott, from the same field of endeavor discloses a network device comprising: an ingress module having an input interface to receive a cell of the data packet (col. 10 L15-21); an egress module having output interface to output the cells (col. 10 L27-30); a header detector configured to detect a header of the cell of the data packet and remove the header from the cell of the data packet (col. 10 L22-23, L54-55); a counter to determine and/or count the number of octets of the user data PDU of the payload; and an insertion module that adds pad characters to make the frame or cell equal an integer number of 48 octet cells (i.e. inserting null bytes if the frame or cell does not satisfy an integer number of 48 octet i.e. if it does not satisfy the multiple number of the predetermined number of bytes, an even number, col. 10 L40-50, fig. 5C item #236).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Thompson in view of Scott, in order to include a counter that determines whether the cell of the data packet contains a multiple of a predetermined number of

bytes after the header has been removed (i.e. a counter that counts number of bytes in the cell of the data packet), since Scott teaches and discloses a counter that counts data octets of the user data PDU of the payload and adding pad characters to make the frame equal an integer number of an even number of 48 octet cells.

One of ordinary skilled in the art would have been motivated because it would have determined and/or counted the number of bytes in a cell (Scott, col. 10 L40-50) and based on the determination it would have inserted the pad byte into the cell in order to align the headers and the cell (Thompson, col. 1 L25-38).

However, Thompson in view of Scott does not disclose a data packet comprising a plurality of cells including a header cell, wherein the header cell of the plurality of cells comprises a header and packet data information (please note: Scott inherently discloses the limitation because Scott is related to ATM networks, however, in order to establish the proper prima facie case, Parruck has been introduced).

Parruck, from the same field of endeavor explicitly discloses a data packet comprising a plurality of cells including a header cell, wherein the header cell of the plurality of cells comprises header and packet data information (col. 1 L64 to col. 2 L9, col. 11 L5-19, col. 17 L6-64, col. 25 L58 to col. 26 L43: i.e. Parruck discloses preventing misalignment in ATM networks and MPLS network).

Therefore it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to modify Thompson in view of Scot and further in view of Parruck, in order to prevent misalignment in an ATM networks.

One of ordinary skilled in the art would have been motivated because it would have prevented misalignment of the data packet and/or header cell in an ATM network (Parruck, col. 30 L49 to col. 31 L17).

As per claim 2, Thompson in view of Scott and further in view of Parruck discloses the network device wherein the network device comprises an aggregator that interfaces with an Ethernet and a SPI-4 system (Parruck, col. 31 L20-56, fig. 1, fig. 4, fig. 27). One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 1.

As per claim 3, Thompson in view of Scott and further in view of Parruck discloses the network device configured to interface between twelve 1-gigabit ports and one 12 Gigabit/s SPI-4 interface (Parruck, col. 31 L20-56, fig. 1, fig. 4, fig. 27: please note the port speed and uplink speed may vary, however various modules are available with various speeds or bandwidth). One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 1.

As per claim 4, Thompson in view of Scott and further in view of Parruck discloses the system wherein the network device is a network switch (Parruck, fig. 2, fig. 4, fig. 9, col. 10 L1-25). One of ordinary skilled in the art would have been motivated because of the same reasons as set forth in claim 1.

As per claim 6, Thompson further discloses forwarding the modified cell of the data packet to an output port (col. 6 L30-46). Therefore, claim 6 is rejected for the same reasons as set forth in claim 1 above.

As per claims 7, 8 and 10-12, they do not teach or further define over the limitations in claims 1-4 and 6. Therefore, claims 7, 8 and 10-12 are rejected for the same reasons as set forth in claims 1-4 and 6.

3. Claims 5, 9 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over Thompson, Michael I. (herein known as Thompson, EP 0 572 145 A2) in view of Scott (U. S. Patent No. 6,512,773 B1), further in view of Parruck et al. (hereinafter Parruck, U. S. Patent No. 7,139,271 B1), and further in view of Yik et al. (U. S. Patent No. 6,697,873 B1).

As per claim 5, Thompson, Scott and Parruck disclose the network device comprising a layer two switching module configured to build a table of forwarding rules (Parruck, Parruck, fig. 2, fig. 4, fig. 9, col. 10 L1-25) and configured to instruct the extraction module to remove the null bytes from the modified cell of the data packet as the modified cell of the data packet exits the network device (Thompson, col. 6 L35-46; Parruck, col. 1 L64 to col. 2 L9, col. 11 L5-19, col. 17 L6-64, col. 25 L58 to col. 26 L43), however, Thompson, Scott and Parruck does not disclose a medium access control protocol module having a MAC address for transmitting the modified cell of the data packet and a layer two switching module configured to build a table of forwarding rules upon which the MAC addresses exist.

Yik explicitly discloses an apparatus comprising a medium access control protocol module having a MAC address for transmitting the modified cell of the data packet and a frame-forwarding device including MAC address tables (i.e. a layer two switching module building a forwarding table based on MAC addresses, see abstract, fig. 2, fig. 6, fig. 7A and col. 2L20-31, col. 4 L33-67).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to incorporate the teaching of Yik as stated above with Thompson, Scott and Parruck in order to include a MAC module for transmitting the modified cell of the data packet and a layer two switching module for building a forwarding table.

One of ordinary skilled in the art would have been motivated because it would have increased the performance of the network by forwarding the frames to the correct output port associated with the particular MAC address (Yik, col. 2 L20-31).

As per claim 9 and 13, they do not teach or further define over the limitations in claim 5. Therefore, claims 9 and 13 are rejected for the same reasons as set forth in claim 5.

## ***Additional References***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Mizutani et al., U. S. Patent No. 5,974,466: ATM controller.

***b.*** Bakke et al., U. S. Patent No. 5,566,170: Method and Apparatus for accelerated packet forwarding.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAMAL B. DIVECHA whose telephone number is 571-272-5863. The examiner can normally be reached on Increased Flex Work Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on 571-272-3939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Art Unit 2151
February 14, 2007.

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